Remarks

A. Introduction

Claims 1-45 are pending.

B. Interview

A telephone interview was held on February 7, 2008. The undersigned thanks Examiner Monikang for the courtesy extended in that call.

C. Double Patenting

Claims 1, 12, 17, 27, and 29 of the present application were provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/684,222, (hereinafter referred to as "the '222 application"). Claims 2, 5, 16, 18, 20, and 28 of the present application were provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 7 of the '222 application. Claims 10 and 14 of the present application were provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 6 of copending Application No. 10/684,208 ("the '208 application"). Claims 11, 15, and 26 of the present application were provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 9 of the '208 application.

Applicant states that a terminal disclaimer will be submitted upon receiving allowable subject matter.

D. Rejections based on 35 U.S.C. §§102, 103

Claims 1-3, 5-30 and 33-35 were rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Publication No. 2003/0179891 A1 (Rabinowitz et al). Claims 4 and 31-32 were rejected under 35 U.S.C. §103(a) as being unpatentable over the Rabinowitz reference.

The claims as currently presented recite generating predicted transfer functions for at least two of the plurality of listening positions, and statistically analyzing the predicted transfer functions. See claim 1 ("modifying the transfer functions based on the potential correction factors in order to generate predicted transfer functions for at least two of the plurality of listening positions" and "statistically analyzing across at least one frequency of the predicted transfer functions for the at least two of the plurality of listening positions"); claim 12 ("instructions for modifying the transfer functions based on the potential correction factors in order to generate

predicted transfer functions for at least two of the plurality of listening positions" and "instructions for statistically analyzing across at least one frequency of the predicted transfer functions for the at least two of the plurality of listening positions"); claim 17 ("modifying the transfer functions based on the potential correction factors in order to generate predicted transfer functions for at least two of the plurality of listening positions" and "statistically analyzing the predicted transfer functions for the at least two of the plurality of listening positions"); claim 27 ("logic for modifying the transfer functions based on the potential correction factors in order to generate predicted transfer functions for at least two of the plurality of listening positions" and "logic for statistically analyzing the predicted transfer functions to determine at least one characteristic of the predicted transfer functions across the at least two of the plurality of listening positions"); and claim 29 ("modifying the transfer functions based on the potential values in order to generate predicted transfer functions for at least two of the plurality of listening positions" and "statistically analyzing the predicted transfer functions to determine at least one characteristic of the predicted transfer functions across the at least two of the plurality of listening positions").

For ease of reference, Applicants reproduce below Figure 1 of the Rabinowitz reference:

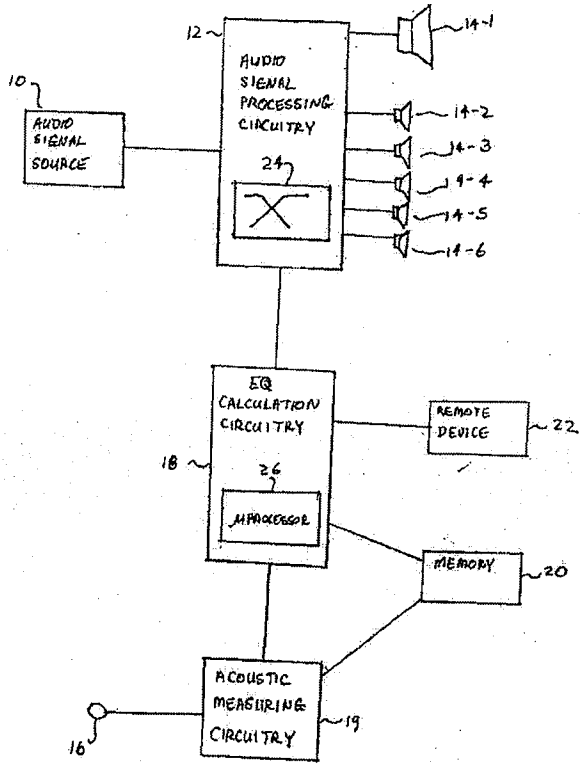
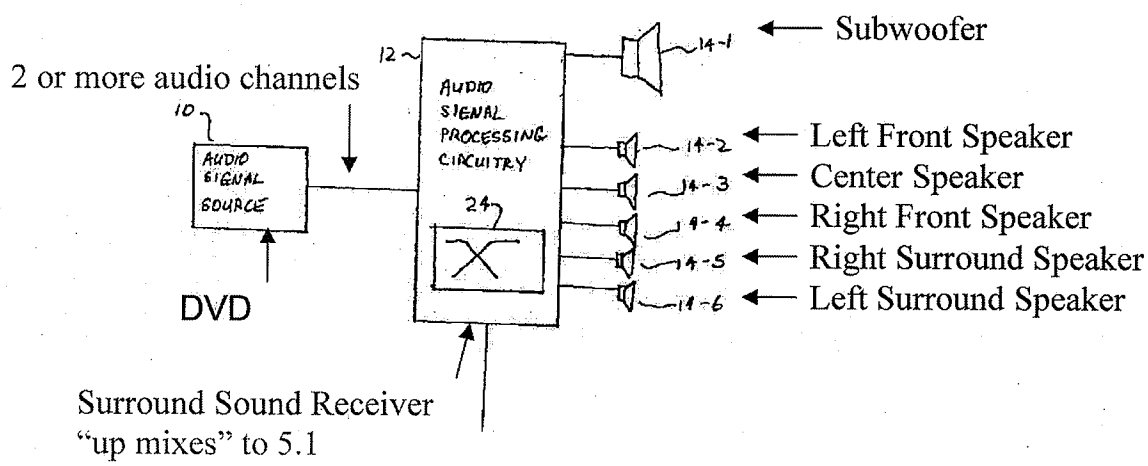
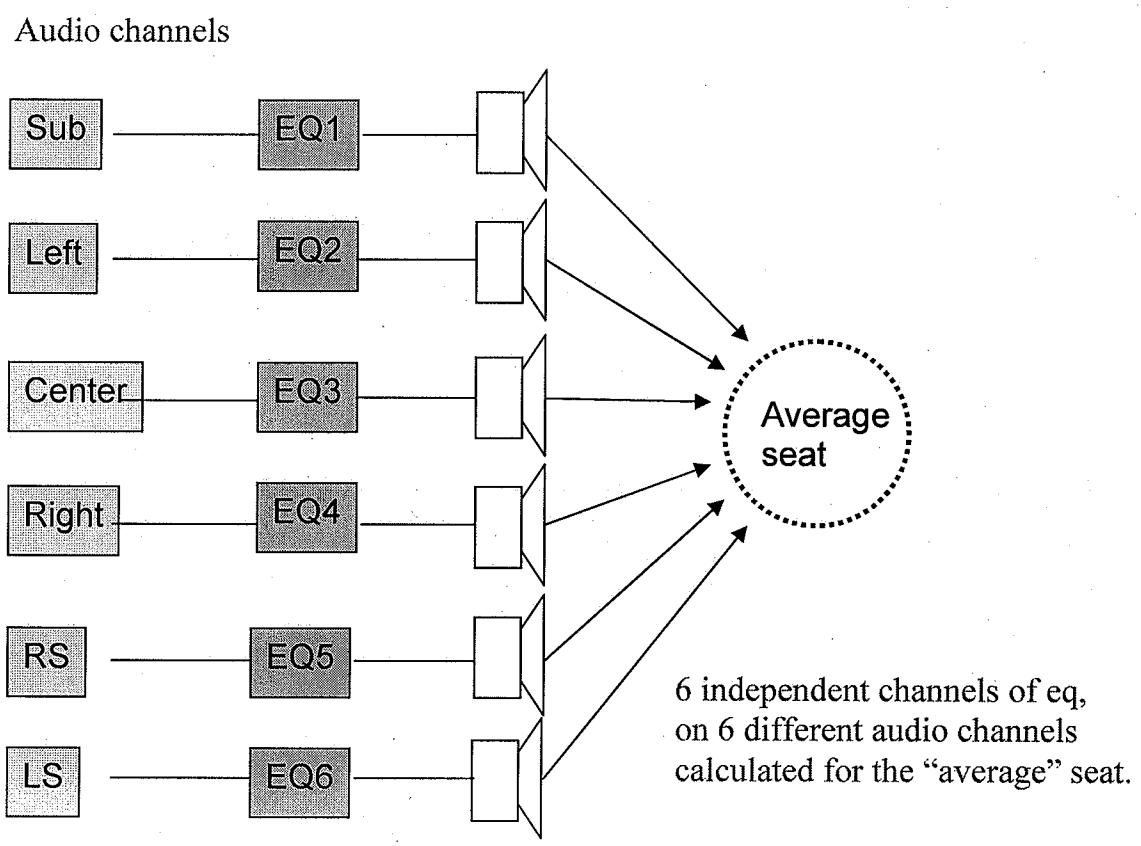


FIG. 1

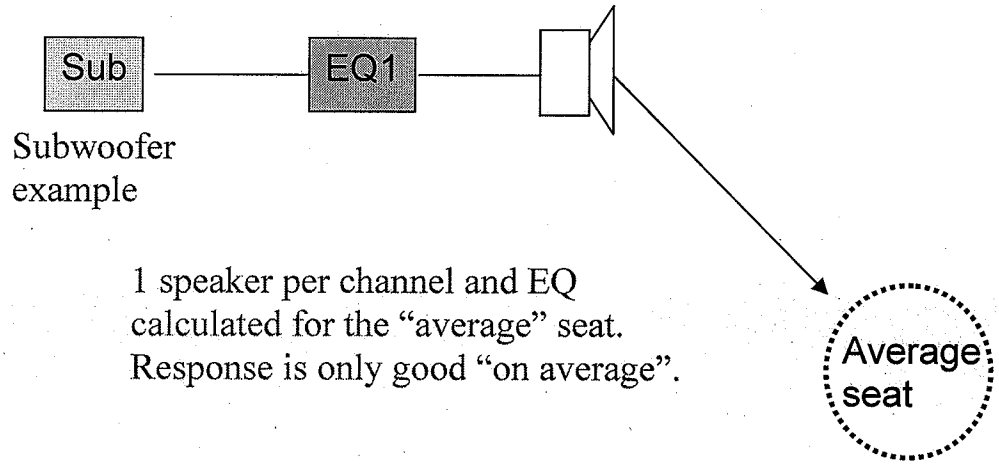
Applicants further present a portion of Figure 1 from the Rabinowitz reference with additional explanation illustrating a typical home-theater setup:



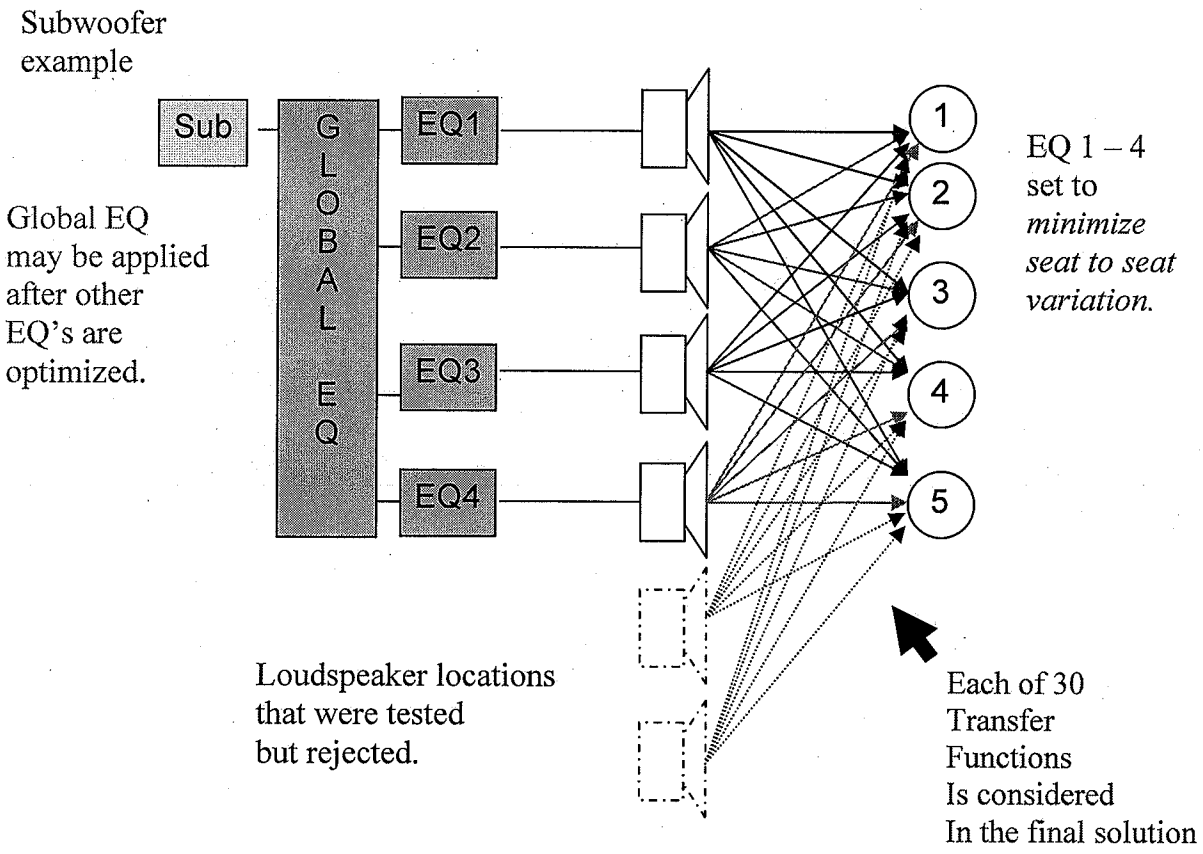
Each speaker illustrated in Figure 1 of the Rabinowitz reference reproduces a single "audio channel". See elements 14-1, 14-2, 14-3, 14-4, 14-5, and 14-6. This system is typically called a 5.1 channel system. The Rabinowitz reference discusses measuring the response of each speaker (i.e., channel) over several listening locations and calculating an average response for each speaker. The average response of each speaker is then equalized to a target. The following illustration is provided to illustrate this measuring of the response for each speaker channel in the Rabinowitz reference:



The following figure focuses on one of the channels (the subwoofer channel):

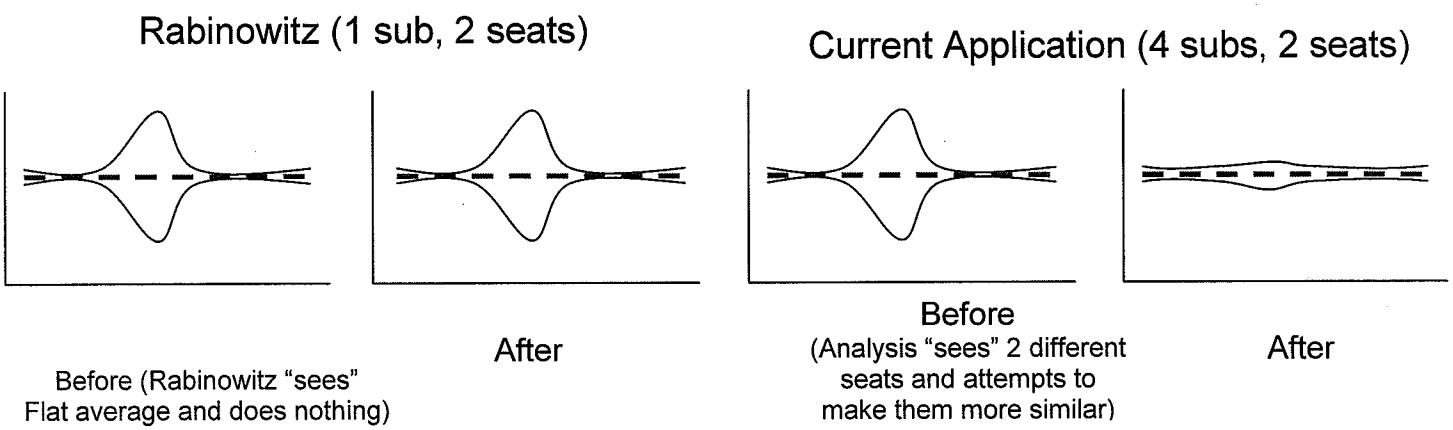


In contrast to the Rabinowitz reference, the claims as currently presented predict the transfer functions at at least two of the plurality of listening positions, and perform the statistical analysis of those predicted transfer functions. An illustration of the predicted transfer functions at each of the listening positions is illustrated below:



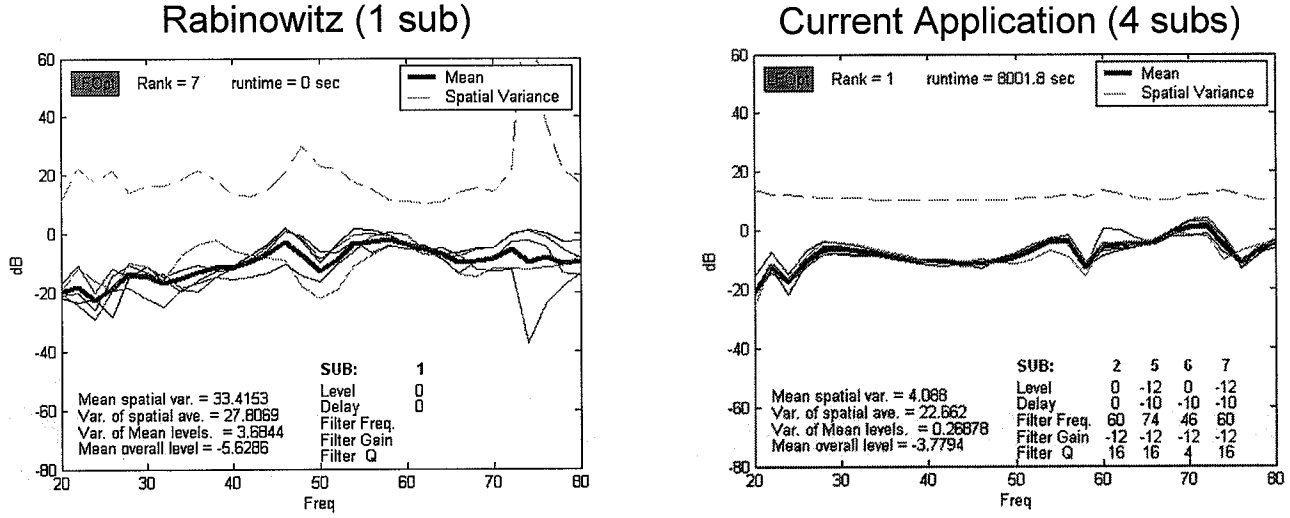
As illustrated above, equalizations for one, some, or all of the different speakers (EQ1, EQ2, EQ3, and EQ4). Predicted transfer functions for the different equalizations may be generated for each of the listening positions. For example, the predicted transfer functions generated by speaker 1 (using EQ1) may be generated for listening positions 1 through 5. Likewise, the predicted transfer functions for speakers 2-4 (using EQ2, EQ3, and EQ4) may likewise be generated. In this way, the transfer functions from each of the speakers may be used to determine the resulting sound at listening positions 1-5. The statistical analysis may then be used to select the equalization (EQ1-4) that results in a particular characteristic (such as flatness across listening positions 1-5.

The following is an illustration of the different results when using the teachings of the Rabinowitz reference versus the invention as presently claimed:



As illustrated above, each fine curve represents response at a single seat and the heavy dashed curve is the spatial average of the seats. Using the teaching in the Rabinowitz reference, the responses at the seat (fine curves) do not improve as much as using the teaching of the current invention. This is due to generating predicted transfer functions at each of the seats and statistically analyzing across the seats.

A real world example is produced below:

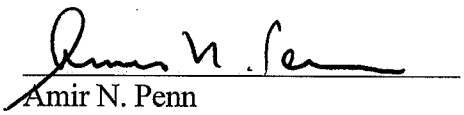


Each fine curve represents response at a single seat, the heavy curve is spatial average of the seats, and the dashed curve is variance as a function of frequency. As shown above, as a result of predicting the transfer functions at each of the listening positions, and statistically analyzing across the listening positions, the correction factors may be selected such that characteristics across the listening positions (such as variance) may be improved. For example, as shown above, the variance under the methodology as claimed is significantly flatter. Thus, the claims as currently presented distinguish over the Rabinowitz reference.

E. Conclusion

The Examiner is invited to contact the undersigned attorneys for the Applicant via telephone if such communication would expedite this application.

Respectfully submitted,



Amir N. Penn
Registration No. 40,767
Attorney for Applicant

BRINKS HOFER GILSON & LIONE
P.O. BOX 10395
CHICAGO, ILLINOIS 60610
(312) 321-4200